Japanese cedar longhorned beetle *Callidiellum rufipenne*

The Japanese cedar longhorned beetle is an exotic insect that bores into trees of the cypress family. The beetle is known to attack weakened or felled trees, but it has been observed attacking apparently healthy nursery stock in the northeastern United States where it has established. This exotic insect poses a concern especially to tree nursery and ornamental industries.

Michigan risk maps for exotic plant pests.

Other common name

smaller Japanese cedar longhorned beetle

Systematic position

Insecta > Coleoptera > Cerambycidae > *Callidiellum rufipenne* (Motschulsky)

Global distribution

Endemic to East Asia (China, Koreas, Japan, Russia). The beetle was accidentally introduced to Argentina, Canada (Vancouver), Italy, New Zealand, Puerto Rico, Spain and Taiwan. In the United States, the beetle has been detected in Washington in 1954 and more recently in the Northeast (Connecticut, Massachusetts, New Jersey, New York, North Carolina and Rhode Island).

Quarantine status

This insect has been managed as a quarantine organism in infested areas of New England where eradication measures have been employed (Lundgren 2001).

Plant hosts

Larvae bore into coniferous trees of the cypress family, Cupressaceae. Major hosts include arborvitae (*Thuja*), juniper (*Juniperus*) and cedar (*Chamaecyparis*).

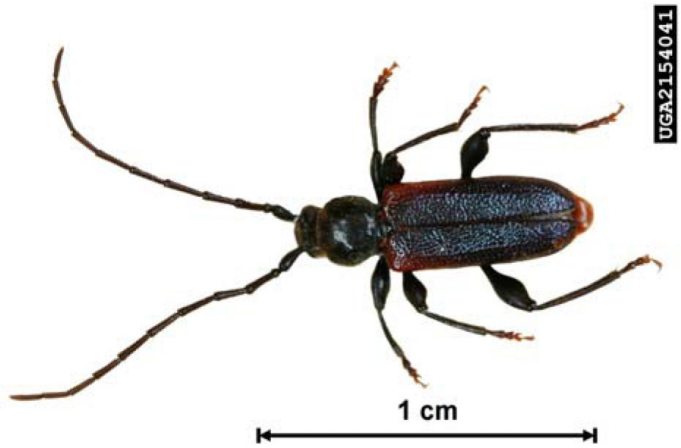
Beetles normally colonize weakened or freshly felled trees. However, in Connecticut, the beetle has been observed completing development in apparently healthy arborvitae (Maier 2007).

Biology, identification, and damage

View information at: http://www.aphis.usda.gov/lpa/pubs/jclbpale.pdf

Signs of infestation

- Bark depressions and sinuous puckering resulting from larval mining.



Adult. (Photo: C. Pierce, USDA APHIS PPQ, Bugwood.org)

Adults. Male (left) has deep blue to black wing cover and longer antennae. Female (right) has red wing cover and shorter antennae (Photo: Connecticut Agricultural Experiment Station Archive, Bugwood.org)

- Light red frass from openings to the tunnels on branches and trunk.
- Adult exit holes chewed out on bark in early spring, elliptical, 6-10 mm diameter.
- Adults (6-14 mm long) are often found at the base of crotch where two branches meet.
- Gentle scraping of the bark may reveal shallow, flat, sinuous and sawdust-filled galleries (2-6 mm wide).

Management notes

In the Eastern United States, trap logs (eastern red cedar or American arborvitae logs) coated with sticky

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Larva and its frass plugging the tunnel behind (Photo: Connecticut Agricultural Experiment Station Archive, Bugwood.org)

Frass-filled larval galleries (Photo: Connecticut Agricultural Experiment Station Archive, Bugwood.org)

Elliptical adult exit hole (Photo: Connecticut Agricultural Experiment Station Archive, Bugwood.org)

material have been used for beetle detection in early April (Maier 2007). Infestation of live hosts appears to be limited to stressed landscape plants (Maier 2007). Nursery stock can be inspected for the sinuous puckering of the bark that is associated with larval mining (Lundgren 2001). Measures to limit the spread of the beetle include debarking trees after harvesting to remove oviposition sites and proper care of live plants (Maier 2007). Chemical control options are available (Lundgren 2001).

Economic and environmental significance to Michigan

The Japanese cedar longhorned beetle has been found at several nurseries in Connecticut and observed to develop in apparently healthy nursery stock. Its introduction to Michigan would represent a significant threat to tree nursery and ornamental industries as cupressaceous trees and shrubs are widely used in landscaping. Once established, control of infestations in nursery stock may lead to increased pesticide use, increased production cost and lowered nursery stock marketability (Lundgren 2001).

Likely pathways of entry in Michigan

Wood pallets and dunnage, lumber, wood products and nursery stock of Cupressaceae source and of East Asian origin.

Between 1978 and 1983 alone, this insect was intercepted 213 times at U.S. ports of entry, primarily in Japanese cedar dunnage (packing material) (Hoebeke 1999). In addition, beetles were accidentally introduced to Italy on timber imported from eastern Asia.

If you find something suspicious on a susceptible host plant, please contact MSU Diagnostic Services (517-355-4536), your county extension office, or the Michigan Department of Agriculture (1-800-292-3939).

References

Anon. 2008. Japanese cedar longhorned beetle. Massachusetts Department of Agricultural Resources. (http://www.massnrc.org/PESTS/pestFAQsheets/japanesecedarlonghorn.html)

Anon. 2009. *Callidiellum rufipenne* (Motschulsky) – smaller Japanese cedar longhorned beetle. Canadian Food Inspection Agency. (http://www.inspection.gc.ca/english/plaveg/pestrava/calruf/tech/calrufe.shtml)

Hoebeke, E. R. 1999. Pest alert: Japanese cedar longhorned beetle in the eastern United States. (http://www.aphis.usda.gov/lpa/pubs/jclbpale.pdf)

Lundgren, J. G. 2001. Pest reports: EXFOR (Exotic Forest Pest Information System) database: *Callidiellum rufipenne*. (http://spfnic.fs.fed.us/exfor/data/pestreports.cfm?pestidval=87&langdisplay=english)

Maier, C. T. 2007. Distribution and hosts of *Callidiellum rufipenne* (Coleoptera: Cerambycidae), an Asian cedar borer established in the eastern United States. Journal of Economic Entomology. 100(4): 1291-1297.

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